SOME COMMON EDIBLE AND POISONOUS MUSHROOMS

FLORA W. PATTERSON

Mycologist

and

VERA K. CHARLES

Assistant Mycologist, Office of Pathological Collections

FARMERS' BULLETIN 796

UNITED STATES DEPARTMENT OF AGRICULTURE

Contribution from the Bureau of Plant Industry

WM. A. TAYLOR, Chief

IMPERIAL MYC... INSTITUTE F2 JUL 1945

Washington, D. C. March, 1917

EXAMINE CAREFULLY BEFORE YOU EAT.

MUSHROOMS and some other fungous growths are highly prized as articles of food by many people. The nutritive value of mushrooms is not high, but they may be prepared in various ways which will render them delicious. More people doubtless would seek wild mushrooms and other fungi if they were sufficiently informed to distinguish between the edible and the deadly poisonous growths. To assist the novice to make these distinctions is the purpose of this bulletin. Some very erratic and dangerous ideas concerning ways of telling the edible from the poisonous growths are altogether too commonly believed. Mushrooms are frequently thought of as edible and toadstools as poisonous. As a matter of fact, the words "mushroom" and "toadstool" are used indiscriminately and do not indicate whether the plants are edible or poisonous.

A test for poisonous mushrooms often recommended is based on the belief that if a silver coin placed in the utensil in which mushrooms are cooked tarnishes the mushrooms are poisonous. Absolutely no reliance can be placed on this test, as both poisonous and edible kinds may turn silver dark.

Equally baseless is the belief that a mushroom is shown to be edible if the skin can be peeled from the cap readily, because peeling is possible with many poisonous species.

The notion that soaking or boiling poisonous mushrooms in salt water will render them harmless has no foundation in fact.

Some people have thought that the presence of insects on mushrooms is a proof of their edibility. This is a dangerous supposition, because insects infest the most poisonous as well as the best edible species of fungi.

The collector of mushrooms can not depend upon any simple test. If he intends to use them for food he must know what he is gathering. It is a comparatively simple matter to learn to recognize a few kinds of deadly mushrooms and certain edible ones. If he will gather only the kinds that are well known to him, a careful collector need not be afraid to gather wild fungi for food. He should not be misled by attractive colors or pleasant odors.

It is never safe to collect the young, unopened mushrooms, commonly called buttons, unless they are immediately connected by whitish threadlike strands with a well-known species, as even an experienced collector is unable to distinguish between poisonous and edible species when they are in the button stage.

In collecting and identifying mushrooms one must make a careful examination of the specimens while fresh, as mushrooms change very quickly after being gathered.

The species of fungous growths selected for description in the following pages are very widely distributed, and this bulletin should make them easily recognizable by a careful observer who wishes to become acquainted with some of the varieties commonly found in gardens, lawns, woods, and pastures.

Recipes for cooking will be found on pages 19 to 23.

SOME COMMON EDIBLE AND POISONOUS MUSHROOMS.

CONTENTS.

	Page.		Page.
The structure of mushrooms	3	Recipes for cooking mushrooms	19
Descriptions of mushrooms	4	Canning mushrooms	23
Descriptions of miscellaneous fungi	14	Drying mushrooms	24
Precautionary measures	18		

THE STRUCTURE OF MUSHROOMS.

The parts which are common to all mushrooms are the cap and the stem. Some species may have a volva or a veil, or both. The volva is a membranous envelope or sac, which in the young state completely surrounds the plant. (Fig. 1, *A*, *e*.) Underneath the cap are plate-

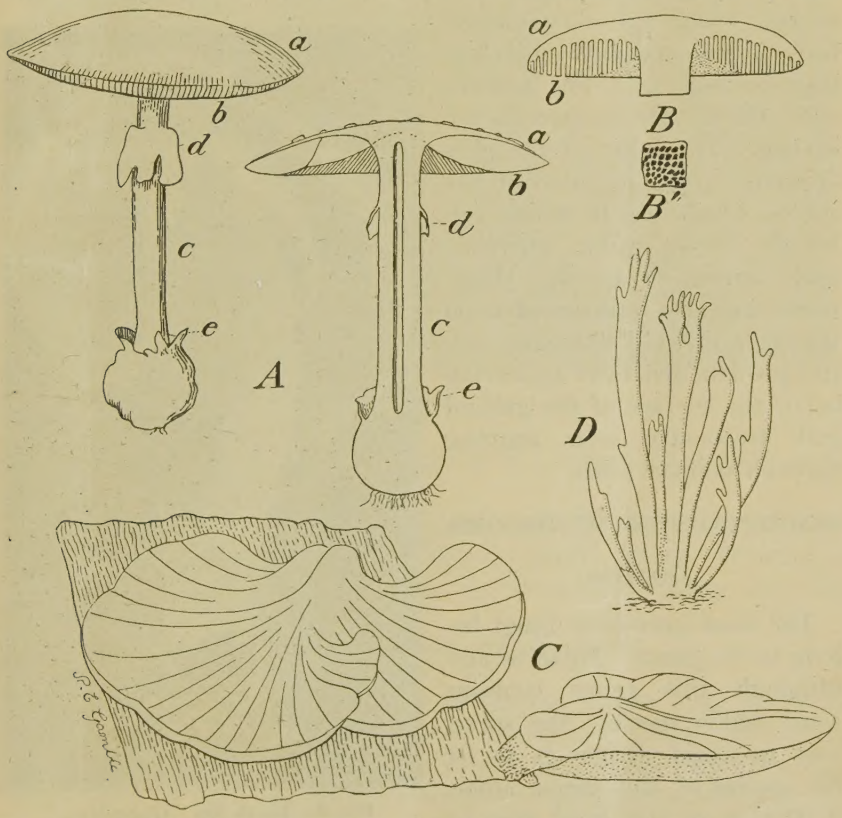

FIG. 1.—*A*, A gill-bearing mushroom (side view and vertical section) : *a*, Pileus, or cap; *b*, gills; *c*, stem; *d*, ring; *e*, volva, or cup. *B*, A tube-bearing or pore-bearing mushroom (section of upper part); *a*, Cap; *b*, tubes, or pores. *B′*, View of part of the lower side of the cap of a tube-bearing mushroom. *C*, A beefsteak fungus. *D*, A coral fungus.

like folds, called gills. (Fig. 1, *A*, *b*.) In some mushrooms the gills are at first covered with a thin veil, which as the plant develops may entirely disappear or remain as a ring (fig. 1, *A*, *d*) about the stem.

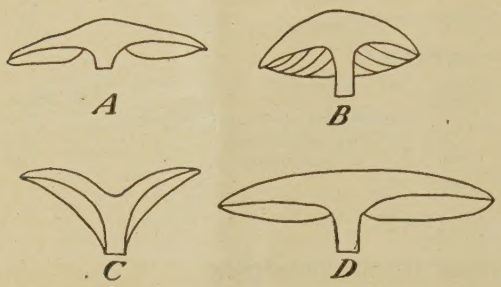

FIG. 2.—Mushrooms showing varying shapes of caps and kinds of gills: *A*, Cap umbonate, gills free; *B*, cap convex; *C*, cap funnelform, gills decurrent; *D*, cap expanded.

The shape of the cap is a very important character in identifying mushrooms. The terms used in this bulletin to describe its shape are umbonate, convex, expanded, and funnelform. These words may be best understood by referring to figure 2.

Mushrooms are reproduced either by spores or by spawn. The spores, which are very minute bodies, are borne on the gills and may be seen as a fine powder when the mature mushrooms are shaken. The color of the gills depends upon the color of the spores, which may be white, yellowish, brown, pink, purplish, dark brown, or black. Mushrooms are also reproduced from spawn, which is a white, thread-like growth, generally appearing below the surface of the ground and frequently seen running through manure piles.

FIG. 3.—Death cup. (Poisonous.)

DESCRIPTIONS OF MUSHROOMS.

AMANITAS.

The most poisonous fungi belong to the genus [1] Amanita, and although this genus contains some edible species [2] the surest way to avoid danger is to let all species of this genus alone. A fungus of this kind may be recognized among the white-spored agarics (gill fungi) by the

[1] Genus: A group of closely related species.

[2] Species: The smallest group of plants or animals to which distinctive and invariable characters can be assigned.

presence of a volva and a veil. Young plants are completely inclosed by the volva, and the manner in which it breaks away varies according to the species. A part of the volva remains on the top of the cap, around its margin as scales, or as a broken cup at the base of the stem.

Death Cup. Amanita phalloides. (Poisonous.)

In the death cup (fig. 3) the color of the cap ranges from white or lemon or olive colored to brownish; it is fleshy, sticky when moist, and broadly bell shaped, or oval, with white gills. The base of the

FIG. 4.—Fly agaric. (Poisonous.)

stem is large, forming a bulb which is in a large cup-shaped volva. There is a large white ring.

The death cup is the most dangerous of all mushrooms, and no antidote is known which will overcome its deadly effects. It is found growing in woods or on cultivated land from early spring until late summer.

Fly Agaric. Amanita muscaria. (Poisonous.)

In this species (fig. 4) the color of the cap ranges from yellow to orange or blood red and the remnants of the volva remain as whitish scales on the cap. The veil persists as a large, torn ring about the upper part of the stem, which is white and enlarged at the base and usually marked by scaly ridges or incomplete rings.

The fly agaric is very common and may be found from early summer until autumn.

PARASOL MUSHROOM. LEPIOTA PROCERA. (EDIBLE.)

In the parasol mushroom (fig. 5) the cap is at first ovate; later it becomes expanded, with a central elevation, and the cuticle (skin) breaks up into brown scales. The gills are free[1] and white. The stem is long and slender, with a large ring, which is movable when old.

This very attractive and graceful species is found in pastures, lawns, thin woods, etc. It appears singly or in small groups during the summer or early autumn.

GREEN-GILL LEPIOTA. LEPIOTA MORGANI. (POISONOUS.)

In the green-gill lepiota (fig. 6) the cap is fleshy, rounded, and white, with a yellowish or brownish cuticle (skin), which breaks up into scales except at the center. The gills are free, white, slowly becoming green. The stem is long, white, and has a large movable ring.

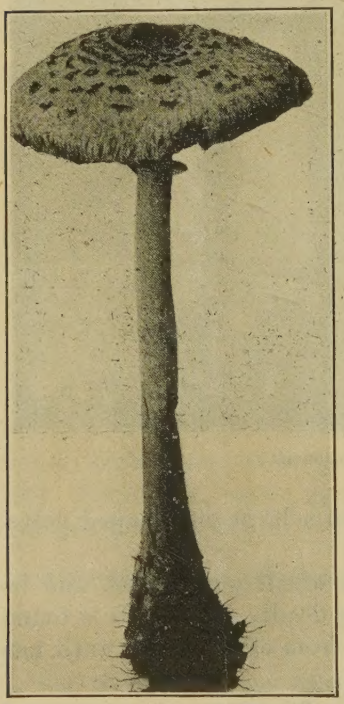

FIG. 5.—Parasol mushroom. (Edible.)

The green-gill lepiota occurs very commonly and abundantly, often forming large fairy rings. It is poisonous and should be strictly avoided. Even small pieces of the uncooked mushrooms have caused serious illness. The gills are slow in changing color, but they gradually become green, a characteristic peculiar to this species.

HONEY-COLORED MUSHROOM. ARMILLARIA MELLEA. (EDIBLE.)

The cap of the honey-colored mushroom (fig. 7) is oval to convex and expanded, sometimes having a slight elevation in the center, which generally has pointed dark-brown scales. Its color ranges from honey colored to dull reddish brown. The gills are white, attached to or running down the stem, which is spongy, smooth, or scaly. The ring is easily broken and often disappears.

The honey-colored mushroom is extremely variable in regard to the color, the character of the cap, whether smooth or scaly, and the shape and size of the stem. It is very common and is generally found at the base of rotting stumps, although it is often a serious parasite of fruit trees, causing root-rot.

[1] Gills not attached to the stem are said to be free.

OYSTER MUSHROOM. PLEUROTUS OSTREATUS. (EDIBLE.)

In the oyster mushroom (fig. 8) the caps are shell shaped and have a very short lateral stem or no stem at all. The caps vary in color from cream white to brownish. The gills are white and run down the short stem.

FIG. 6.—Green-gill fungus. (Poisonous.)

The oyster mushroom is a very fine edible species, occurring from spring until late fall singly or in clusters on the limbs or trunks of living or dead trees.

CHANTERELLE. CANTHARELLUS CIBARIUS. (EDIBLE.)

In the chanterelle (fig. 9) the cap is fleshy, thick, smooth, more or less funnel shaped, and with the margin often wavy. The color is very striking, being opaque egg yellow. The thick, veinlike, branching gills are of the same color as the cap and run down the stem, which is short and of the same color as the cap.

This species has long been considered one of the finest edible mushrooms and is especially prized in Europe. It is widely distributed and occurs in open woods and grassy places. It sometimes has an agreeable odor of apricots.

JACK-O'-LANTERN. CLITOCYBE ILLUDENS. (POISONOUS.)

The cap of the jack-o'-lantern (fig. 10) is fleshy, almost flat, finally funnel shaped, saffron yellow, becoming brownish in age. The gills

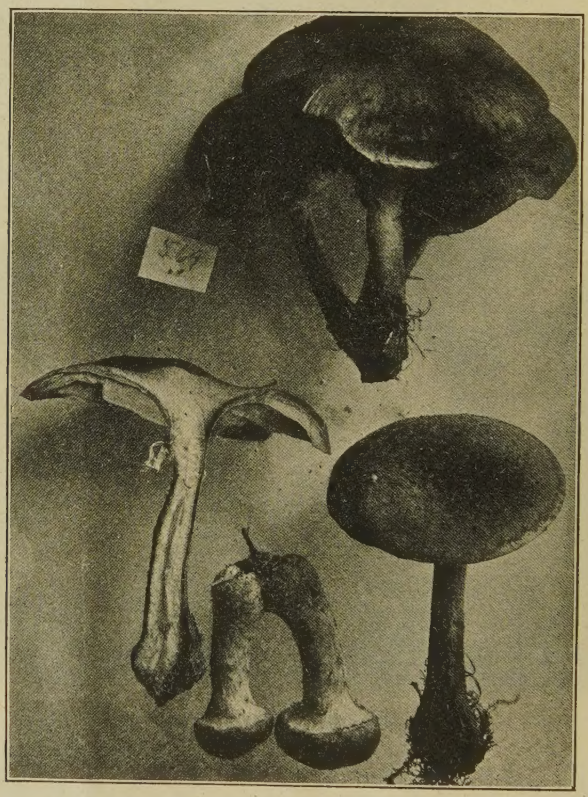

FIG. 7.—Honey-colored mushroom. (Edible.)

are broad, running down the stem, and are the same color as the cap. The stem is solid, firm, rarely erect, generally curved, and of the same color as the cap and gills.

The jack-o'-lantern is a very conspicuous fungus, on account of its striking color and its habit of growing in large clumps about the base of decaying trees or stumps. Its common name was given it on account of the phosporescent character of the plants, which renders them visible at night. This species is not wholesome and should not be eaten.

EQUESTRIAN TRICHOLOMA.* TRICHOLOMA EQUESTRE. (EDIBLE.)

In this mushroom (fig. 11) the cap is at first convex with inturned margin; later it becomes expanded. It is somewhat sticky and pale yellowish, with a greenish or brownish tinge. The gills are sulphur yellow and crowded, and the stem is short and stout and yellow in color.

This species is exceedingly good and is adapted to various methods of cooking. In many localities it appears abundantly in the fall under pine trees, often forcing its way through a dense mat of pine needles and forming irregular fairy rings.

LACTARIUS MUSHROOMS.

This genus is easily recognized by the white or colored milk, especially abundant in the gills. The plants are brittle and rigid, the

FIG. 8.—Oyster mushroom. (Edible.)

stem stout and generally central. Some members of the genus Russula are similar to those of Lactarius in form and brittleness, but differ in the absence of milk. Many species of Russula are edible, but several are known to be poisonous. Although the red forms of Russula are especially attractive, it is safer not to eat them.

Indigo Lactarius. Lactarius indigo. (Edible.)

The cap of the indigo lactarius (fig. 12) is funnel shaped, indigo blue, with a silvery gray luster; in age it fades, becoming greenish. The gills are crowded, an indigo blue, and the stem is short and hollow.

This mushroom is easily recognized by its color.

Orange-milk Mushroom. Lactarius deliciosus. (Edible.)

In this mushroom the cap is convex when young; later it is depressed in the center and finally becomes funnel shaped. The cap is yellowish or deep orange and generally zoned.[1] The gills are yellowish orange, crowded, narrow, and often branched.

This mushroom may be distinguished by its orange color, its zones, and its saffron red and orange milk. A peculiarity of the plant is the fact that it turns green on being bruised. This species has always been highly appreciated for its edibility; it is widely distributed and abundant.

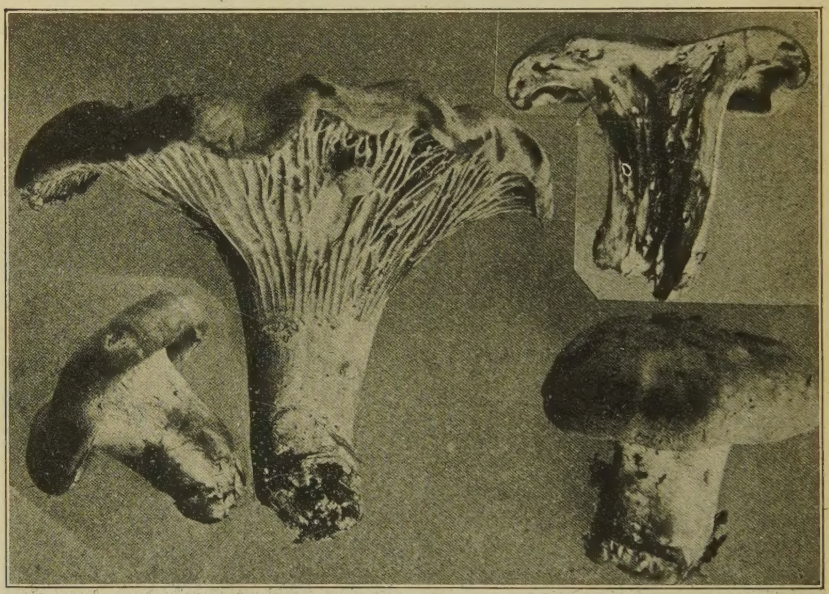

FIG. 9.—Chanterelle. (Edible.)

FAIRY-RING MUSHROOM. MARASMIUS OREADES. (EDIBLE.)

In the fairy-ring mushroom (fig. 13) the caps are convex (fig. 2), but later may become plane, with a slight central elevation. They are rather tough, smooth, cream colored or brownish buff. The gills are broad, not crowded, whitish or cream colored. The stem is tough, the upper part hairy, and the base smooth.

This is a very common edible species and frequently occurs in considerable abundance on lawns.

FAWN-COLORED PLUTEUS. PLUTEUS CERVINUS. (EDIBLE.)

The cap of this mushroom is at first bell shaped, but it later becomes convex and expanded to almost plane. It is light or grayish

[1] Marked with circular bands of color.

brown, usually smooth, but with darker fibers or hairs. The gills are broad, at first white, later becoming flesh colored or pink. The stem is the same color as the cap, and firm, smooth, or scaly.

This species belongs to the pink-spored group of mushrooms. It is found at the base of dead stumps, fallen logs, and sometimes on sawdust piles. When young it is edible and of good flavor.

CORTINARIUS.

There are many species in this genus which are exceedingly attractive on account of their beautiful colors, but as it is difficult for any one but an expert to identify them none are described in this bulletin. The gills are covered by a cobwebby veil, which adheres to the margin of the cap or remains as a delicate silky ring about the

FIG. 10.—Jack-o'-lantern. (Poisonous.)

stem. The spores are rusty brown. Certain species of this genus are edible, while others are unpleasant, and some are extremely poisonous.

COMMON OR CULTIVATED MUSHROOM. AGARICUS CAMPESTRIS. (EDIBLE.)

In the common mushroom (fig. 14) the cap is fleshy, hemispherical, later becoming expanded and nearly flat. It is smooth, in color white or light brown, and the flesh is white and firm. The gills are white at first, later become pink, and finally blackish brown. The stem is stout, smooth, and furnished with a ring.

This is the cultivated and the best-known edible mushroom. It is not only of important commercial value, but being widely distributed and occurring abundantly in the wild state can be gathered

safely by the ordinary collector of mushrooms. The only danger in collecting it is mistaking an Amanita for it; however, this difficulty will be entirely avoided by waiting until the gills are pink or changing to brown. This mushroom may be found in woods, but it grows most frequently in pastures and on richly manured ground.

FIG. 11.—Equestrian tricholoma. (Edible.)

The *Agaricus campestris* is the only species grown commercially. It is cultivated in cellars, caves, and specially constructed houses.

COPRINUS MUSHROOMS.

In this genus the plants are fragile, the spores black, and the gills crowded, dissolving when old into an inky fluid. These mushrooms

FIG. 12.—Indigo lactarius. (Edible.)

occur on dung or on richly manured ground, between the bricks of pavements, or on rotten tree trunks.

Inky-Cap Mushroom. Coprinus atramentarius. (Edible.)

In the inky-cap mushroom (see illustration on title-page) the cap is ovate, slightly expanded, silvery to dark gray or brownish, and

silky or with small scales, especially at the center of the cap. The gills are broad, crowded, white, later pinkish, finally black and changing into an inky fluid. The stem is smooth, shining, whitish, and hollow; a ring low on the stem may soon disappear.

FIG. 13.—Fairy-ring mushroom. (Edible.)

The inky-cap mushroom is a good edible species that is adapted to various methods of cooking or can be used raw as a salad.

Shaggy-Mane Mushroom. Coprinus comatus. (Edible.)

In the shaggy-mane mushroom (fig. 15) the cap is oblong or bell shaped, white or yellowish, with shaggy, darker scales. The

FIG. 14.—Common or cultivated mushroom. (Edible.)

gills are crowded and broad. The stem is hollow, brittle, smooth, or with fibers, and has a thin, movable ring.

The shaggy-mane fungus is recognized easily by its shaggy, bell-shaped cap and black spores and its habit of changing into an inky

mass. It is an excellent edible species and, like the inky cap, appears in the spring and fall, solitary or in clusters.

DESCRIPTIONS OF MISCELLANEOUS FUNGI.

A great many conspicuous forms of fungi grow on various kinds of trees—forest, shade and ornamental, fruit, etc. These fungi are often found on living or dead trees, and economically may be either injurious or of very little importance. They generally gain entrance to a tree through some mechanical injury, as an exposed surface

FIG. 15.—Shaggy-mane mushroom. (Edible.)

resulting from lightning or wind, borings of birds, insects, or other agents. Fungi of this kind are known as wound parasites. (Fig. 16.) Some of the species on trees belong to the gill fungi (Agaricaceæ), but many of them belong to the pore fungi (Polyporaceæ). In the latter class, instead of the spores being on gills, the lower surface of the cap is composed of numerous tubes, in which the spores are produced. (See fig. 1, *B*.) Sometimes these tubes are quite shallow; again they are deep and sometimes composed of several layers of tubes. Many of the species are tough and woody, but certain kinds are fleshy and edible.

Descriptions of a few of the most common and conspicuous forms are here given.

BOLETUS.

In general appearance plants of the genus Boletus resemble species of Agaricus. There are a cap and a central stem, but instead of gills there are pores. Most of the species grow on the ground, but

FIG. 16.—Mushrooms growing from a wound in a living tree.

occasionally they are found growing on decayed trees. Certain species of this genus are edible, but they are difficult to determine and therefore will not be described in this paper.

POLYSTICTUS.

The species of this genus are sometimes wound parasites—that is, fungi which have gained entrance to a tree or other host through

a wound or injured surface. Certain of the species grow on the ground and have a stem, but most are found on trees and are shelving and sessile, i. e., without a stem.

Species of this genus are thin and pliant and often very attractive in appearance, but they are tough and have no food value.

Polystictus versicolor.

In this fungus the caps are thin and shelving and marked by bands of different shades of color, mostly brown. The pores are white and do not extend quite to the margin. The plants are found growing in dense clusters on many kinds of trees.

Polystictus pergamenus.

In general appearance—that is, shape, consistency, and manner of growth—this species resembles *Polystictus versicolor*. It may be distinguished, however, by the lavender color of the pores.

BEEFSTEAK FUNGUS. FISTULINA HEPATICA. (EDIBLE.)

In this species (see fig. 1, *C*) the plants grow out horizontally from the trunks and stumps of living or dead trees. The caps are blood red when fresh, liver shaped, with a wavy or scalloped margin, and the flesh is thick, soft, and juicy. A stem is sometimes present; but if so, it is short and lateral. The pores are yellowish, at first short, later longer, and separate from each other.

This is a very good edible species and is most commonly known as the beefsteak fungus, though it is sometimes called beef tongue, oak tongue, or chestnut tongue.

WEEPING MERULIUS. MERULIUS LACRYMANS.

This fungus has no definite shape, and its soft, gelatinous surface is made up of irregular folds or wrinkles, which do not form pores, but give the growth a pitted appearance. It is first white, then flesh colored, and later orange brown. It causes a very destructive timber rot and is especially injurious to the wood in damp cellars and in houses which are poorly ventilated.

CORAL FUNGI. CLAVARIACEÆ.

The common name of these plants was given them on account of their resemblance to coral. They are erect, club shaped, simple, or branched. (See fig. 1, *D*.) Many species are very beautiful on account of their color, which may be lavender, orange, pink, cream, or white. Certain members of this family are edible, but as the species are difficult to recognize and as cases of poisoning have been reported, it is safer to let all coral fungi alone.

PUFFBALLS. LYCOPERDACEÆ.

Plants belonging to this family are irregular, ball shaped, sometimes with a stemlike base. When young the interior is white and firm; later it becomes yellow and finally breaks up into a brown or purplish powdery mass. Most species grow on the ground, but a few are found on rotten logs.

Puffballs must be eaten only when young and while the flesh is white: after the flesh begins to turn yellow the plants are unwholesome and indigestible.

Pear-Shaped Puffball. Lycoperdon pyriforme.

This species (fig. 17) is a very common little puffball, appearing in dense clusters on decayed stumps or logs.

Giant Puffball. Calvatia gigantea.

Giant Puffball. Calvatia Gigantea.

The giant puffball (fig. 18) is one of the largest and most delicious of the species belonging to this family.

STINKHORN FUNGI. PHALLACEÆ.

The presence of plants belonging to this family is quickly detected by the disagreeable odor emitted as the plants mature. The species most commonly found is *Ithyphallus impudicus* (fig. 19). In the young stage it resembles a gelatinous egg with threadlike strands at the base. In the central portion of the egg is a tubular part which elongates and bursts through the outside cover.

MOREL. MORCHELLA ESCULENTA. (EDIBLE.)

This fungus (fig. 20) is very easily distinguished on account of its resemblance to a sponge. The plants are brittle and have a short stem. The upper part is conical in form, prominently ridged, and has irregular depressions or cavities. The color varies from dingy yellow to tawny or grayish.

The morel has long been considered, both here and abroad, an excellent edible species. It has a wide distribution and occurs especially in damp situations and on sandy banks.

FIG. 18.—Giant puffball. (Edible.)

PRECAUTIONARY MEASURES.

As already stated, the collector should not use mushrooms or any fungi for food unless he is certain as to their identity. He should also bear in mind that poisonous mushrooms may appear in a bed of cultivated mushrooms. They do not grow from the spawn furnished by the dealer, but may be brought in with the material used for making the beds. The grower should be perfectly familiar with the cultivated plant in order not to mistake a wild and poisonous fungus for the edible mushroom.

In case of mushroom poisoning a physician should be summoned immediately, but an emetic should be given before his arrival. Warm salt water or mustard water may be used for this purpose.

His method of treatment will depend upon what mushroom has caused the poisoning and the symptoms and condition of the patient. The physician probably will come prepared to administer apomorphin and such stimulants as atropin, digitalin, and strophanthin.

RECIPES FOR COOKING MUSHROOMS.

According to the views of many persons, mushrooms are best cooked simply, with no seasoning but butter, pepper, and salt.

FIG. 19.—Stinkhorn fungus. (Inedible.)

The addition of various seasonings impairs the delicate mushroom flavor. However, tastes differ, and the opportunity of choice or experiment is afforded by the recipes which follow. All have been either tried by the writers or selected from the printed directions of capable authorities on culinary matters.

Mushrooms may be prepared for the table in any way which would be suitable for oysters.

The caps should be carefully washed, gill side down, but peeling is not always necessary and involves a considerable waste of time

and loss of flavor. Unless the stems are extremely tough they can be used after being cut into small bits and stewed, or, even if tough, after long boiling they can be run through a sieve and made into a soup or sauce.

Wild mushrooms should be cooked soon after collecting, as they are then preserved much better than if kept uncooked, even in a refrigerator.

Some thin, juicy, wild varieties, such as species of Coprinus, may require stewing from 5 to 10 minutes, while thicker, tough plants may require 30 to 40 minutes. Some mushrooms which never become tender by stewing may prove to be excellent when fried.

FIG. 20.—Morels. (Edible.)

Creamed Mushrooms.

Cut the mushrooms into small pieces, stew slowly in butter until tender, add cream or milk, pepper, and salt, and thicken with flour.

Fried Mushrooms.

Beat the yolk of an egg with a tablespoonful of water and season with pepper and salt. Dip each cap in this and then dip into fine cracker crumbs or corn meal. Have butter or cooking oil very hot in a frying pan. Fry slowly on each side for five minutes. A sauce can be made by thickening with flour and adding milk or cream. If desired, serve on toast. A smooth tomato sauce is also excellent.

Deviled Mushrooms.

Chop or break into small pieces 1 quart of mushrooms, season with pepper and salt; prepare 1 pint of bread crumbs; mix the mashed yolks of two hard-boiled eggs with two raw ones and stir into a cup of milk or cream. Put a layer of crumbs in the bottom of a baking pan or dish, then a

layer of mushrooms; scatter over bits of butter; pour on a part of the cream and egg mixture, and continue until the dish is full, having bread crumbs with butter for the top layer. Bake for 20 minutes, closely covered, in a hot oven; then uncover for about five minutes, or long enough for the top to be well browned. If preferred, water and lemon juice may be substituted for milk or cream.

Mushrooms with Bacon.

Fry the bacon, and on removing it from the frying pan keep it hot; cook the mushrooms on each side in the "fryings" and serve on a platter with the strips of bacon arranged as a border.

Several species are good prepared in this manner, but it is especially well suited to the common cultivated mushroom.

Mushrooms Baked with Tomatoes.

In a baking dish arrange small round slices of buttered toast; upon each piece place a rather thin slice of peeled tomato, salted and peppered; upon each slice of tomato place a fine, thick mushroom, gill side up; in the center of each mushroom put a generous piece of butter; season with pepper and salt. Cover the dish and bake in a hot oven for 10 minutes; then uncover and bake for an additional 5 to 10 minutes, as the mushrooms appear to require.

Peppers Stuffed with Mushrooms.

Cut the stem end of the peppers and carefully remove all seeds and the white membrane; chop or break the mushroom into small pieces, season with pepper and salt, press firmly into the peppers, and put a good-sized lump of butter on top of each. The water adhering to the mushrooms after washing will furnish sufficient moisture for their cooking.

Arrange the peppers on end in a baking dish, having the water with salt, pepper, and butter poured in to the depth of about 1 inch. Place the dish in a hot oven, cook covered for 15 minutes; then uncover and baste and cook for 10 or 15 minutes longer, or until the peppers are perfectly tender. An addition to the mushrooms of chopped cooked chicken or veal is a pleasing variation.

Mushrooms with Cheese.

Butter a baking dish; place in layers the mushrooms broken in small pieces and bread crumbs; add grated cheese, salt, pepper, and bits of butter; continue until the dish is filled, letting the top layer be a thin sprinkling of cheese. Cook covered in the oven for 20 minutes; remove the cover for 5 minutes before serving.

Cream of Mushroom Soup.

Stew for an hour or longer the caps and stems cut in small pieces; run through a colander, add cream or milk, thicken with flour, and add butter, salt, and pepper.

Salads.

For salads many mushrooms may be used raw (after being peeled), especially species of Coprinus and Clavaria and all puffballs. Tougher plants can be stewed, drained, and chilled before adding the dressing, which may be either a mayonnaise or a French dressing of oil with vinegar or lemon juice. Serve on lettuce.

Mushrooms Cooked with Cream under a Glass Cover or Bell.

With a small biscuit cutter cut round slices of bread; they should be about 2½ inches in diameter and about 1 inch in thickness. Cut the stems close to

the gills from fresh mushrooms; wash and wipe the mushrooms. Put a tablespoonful of butter in a saucepan; when hot, throw in the mushrooms, skin side down; cook just a moment, and sprinkle with salt and pepper. After the rounds of bread have been slightly toasted, arrange them in the bottom of a bell dish and heap the mushrooms on them; put a little piece of butter in the center; cover over with the bell, which may be of glass, china, or silver; stand them in a baking pan, and then place in the oven for 20 minutes. While these are cooking, mix a tablespoonful of butter and one of flour in a saucepan, add either a half pint of milk or a gill of milk and a gill of chicken stock; stir until it boils; then add half a teaspoonful of salt and a dash of pepper. When the mushrooms have been in the oven the allotted time, take them out; lift the cover, pour over quickly a little of this sauce, cover again, and send them at once to the table.

SUGGESTIONS FOR CERTAIN SPECIES.

Honey-Colored Mushroom.

While not one of the best edible species, this is excellent when fried and served on toast, and it is also good when stewed.

The Chanterelle.

The chanterelle, being rather tough, requires long and slow cooking.

"Cut the mushrooms across and remove the stems; put them into a closely covered saucepan, with a little fresh butter, and sweat them until tender, at the lowest possible temperature. A great heat always destroys the flavor."[1]

Coprinus.

The species of this genus are very delicate, *Coprinus micaceus* being considered the most easily digested of all mushrooms. They are good when steamed for five minutes and served with butter or cream.

Species of Coprinus are also delicious baked with cheese. Butter a baking dish and put in a layer of mushrooms, bread crumbs, cheese grated or cut into small pieces, and season with pepper and salt. Repeat the process once or twice, according to the quantity to be prepared, adding a few small lumps of butter to the last layer. Bake for 15 or 20 minutes.

Beefsteak Fungus.

The beefsteak fungus should be sliced across the grain and soaked in salt water, the length of time varying with its age. The slice should be wiped dry and boiled or fried, then dressed with butter, salt, and pepper.

The fungus may be used raw for salad, dressed to suit the taste, stewed, or made into soup. The suggestion of its use as a foundation for a beefsteak pie is apparently worthy of experiment, as its resemblance to a good steak, in flavor if not in texture, is quite remarkable.

Fairy-Ring Fungus.

The fairy-ring fungus is especially popular when stewed and served with a brown sauce as an accompaniment to beefsteak. The species dries easily, and even those dried naturally in the open may be revived by soaking and then prepared for the table.

Fairy-ring pickles can be made after the fungi have been packed in jars by pouring over them highly spiced vinegar heated to the scalding point. They are ready for the table in about two weeks.

---

[1] Hussey, Mrs. T. J. Illustrations of British Mycology, London, 1849; text accompanying Plate IV.

Morels.

All morels are delicious. Probably the best manner of preparing them is to stuff them with chopped cooked chicken or veal and moistened bread or cracker crumbs, seasoned simply with salt and pepper. The stalks should be split to permit the stuffing and then tied together before the morels are baked. In the covered baking dish there should be a very small quantity of water.

Oyster Mushrooms.

Take small specimens of the oyster mushroom or cut from large tender ones pieces the size and shape of oysters. Dip them in the beaten yolk of an egg to which a tablespoonful of water has been added and roll in cracker crumbs or corn meal. Season with salt and pepper. Fry in either deep fat, melted butter, or oil.

Puffballs.

Never use puffballs unless the inner part is perfectly white when sliced. They should be peeled and then can be dressed raw for a salad, stewed with cream and served either in patty shells or on toast, or fried. When fried simply in melted butter or oil they are fine; or the slices may be dipped in egg and cracker meal before being placed in the frying pan. A cream dressing is a delicious addition to fried puffballs.

The Equestrian Tricholoma.

This species is most excellent when fried; also when creamed and served as patties. A unique way of serving it is in a soup made with water, pepper, and salt, which will compare very favorably with a dish of extremely fine turkey broth. After straining—for it must be a clear soup—add a small amount of butter.

CANNING MUSHROOMS.

The process of canning mushrooms, either the cultivated or wild varieties, is simple, but requires careful attention to the details, as described in the method followed by the writers.

Special canning outfits may be purchased, but just as good results can be secured by devising a homemade apparatus. A wash boiler, having a tight-fitting lid and provided with a false bottom of wire netting or asbestos cut out to fit it, will serve as a good sterilizer (fig. 21). If wire or asbestos is not readily obtainable, slats of wood or a layer of excelsior may be substituted. The glass jars must not touch the bottom of the boiler.

Glass jars, preferably pints, with tops adjusted by a spring, are the most satisfactory for mushrooms (fig. 22).

To can the common cultivated mushrooms, select, if possible, young, unopened buttons, leaving not more than one-half inch of stem below the veil. This involves no waste of good material, for from the stems catsup or powder may be made. Wash the caps lightly, wipe, cut quickly in four pieces, and pack as tightly as possible in jars, adding neither water nor salt. The lids should be put on but the springs not tightened (fig. 22). Place as many jars

as desired in the boiler, which should contain water to about two-thirds the height of the jars. Cover the boiler tightly and boil for 1½ hours on two successive days. Mushrooms contain a large amount of water and shrink greatly during the process; the contents of the jars should, therefore, be combined into fewer jars between successive boilings. Before each boiling, the mushrooms should be packed down, and if there are not enough at the third boiling to fill the jars, open each for a moment just before putting it in the boiler and add boiled water enough to fill. On completion of the third boiling tighten the caps by adjusting the spring.

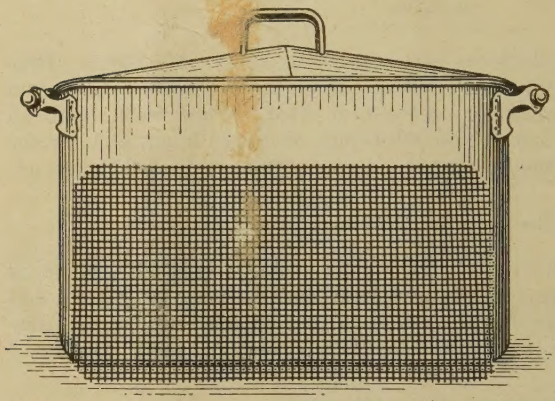

FIG. 21.—A tin wash boiler with a false bottom made of wire netting, used as a convenient sterilizer in canning.

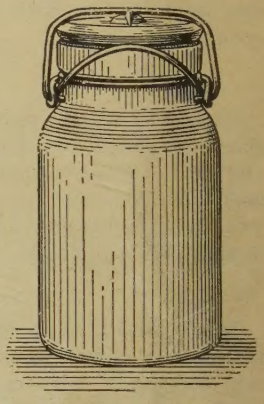

FIG. 22.—A jar with a glass top used for canning mushrooms, showing the spring as adjusted during sterilization.

DRYING MUSHROOMS.

Mushrooms may be preserved entire by drying them in the sun or in an oven. All moisture must be removed before the material is packed in a perfectly tight container. Mushrooms so preserved, after a preliminary soaking in tepid water or milk, may be cooked as if fresh.

Dried mushrooms, and even tough dried stems, may be ground and used as a powder for seasoning gravies and other dishes.

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1917